Donald Abelson
Chief of the International Bureau
Federal Communications Commission
445 12th Street SW
Washington, D.C. 20554

Dear Mr. Abelson:

The National Telecommunications and Information Administration, on behalf of the Executive Branch Agencies, has approved the release of two additional Draft Executive Branch (NTIA) proposals considering federal agency inputs toward the development of U.S. Proposals for WRC-03.

The first proposal addresses agenda item 1.26. This proposal considers the provisions under which earth stations could be used on board maritime vessels. Your WRC Advisory Committee drafted the original proposal, which was approved by the RCS, but with changes.

The second proposal is concerned with agenda item 1.31. This agenda item considers additional allocations to the mobile-satellite service in the 1-3 GHz band, in accordance with Resolutions 226 (WRC-2000) and 227 (WRC-2000). This proposal was approved previously; we are proposing a minor addition to the background text to further clarify the position.

These proposals are forwarded for your consideration and review by your WRC-03 Advisory Committee. Jim Vorhies from my staff will contact Alexander Roytblat and reconcile any differences.

Sincerely,

(Signed April 2, 2002)
Fredrick R. Wentland
Acting Associate Administrator
Office of Spectrum Management

Enclosures

United States of America

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.26: To consider the provisions, under which earth stations located on board vessels, could operate in fixed satellite networks, taking into account the ITU-R studies in response to Resolution 82;

Background Information: Resolves 4 of Resolution 82 states that until WRC-03 takes further action, agreement between the administrations licensing Earth stations on board vessels (ESVs) and affected administrations should be reached on a bilateral or multilateral basis, in accordance with the guidelines in its Annexes 1 and 2. ESVs have been operating for over 10 years either under No. **4.4** of the Radio Regulations, or under national provisions.

ESVs have operated at ports, in territorial waters, and beyond a distance where no coordination would be required.

Several actions have taken place in ITU-R Study Groups to develop Recommendations or CPM text related to this agenda item. These include:

a. A Recommendation agreed in Working Party 4A on the Characteristics of ESVs, including those to be used for sharing studies at 6 GHz and 14 GHz.

b. Several Recommendations in Joint Working Party 4-9S on methods to be used for achieving coordination with fixed stations when ESVs are in motion near the shore, including determination of a distance beyond which no coordination is necessary.

c. CPM text to add a footnote to the Table of Frequency Allocations at 5 925-6 425 MHz and 14-14.5 GHz that references a revised Resolution 82.

d. CPM text to revise Resolution 82 (WRC-2000) as shown in the attachment.

Recognizing that the maritime-mobile satellite service is not allocated in the band 5 925-6 700 MHz and that coordination distances of up to 300 kilometers are being proposed, mandatory provisions in the Radio Regulations are not considered appropriate. As administrations may operate radio systems under 4.4 of the Radio Regulations and ESV systems are mobile, it is appropriate to inform and allow administrations who are operating systems in accordance with the Radio Regulations the opportunity to become aware of the operation of ESVs and take measures to prevent the possibility of harmful interference from ESV systems to their systems.

The proposed footnote and revised Resolution 82 provide for recognition and advance notice that administrations are operating ESV systems and provide guidelines for administrations whose systems might be affected by ESV use to take appropriate action to protect their systems. The bi-lateral coordination delineated in the revised Resolution 82 will allow administrations to come to agreement on the use of ESVs while protecting systems operating in accordance with the Radio Regulations.

Noting the coordination distances of up to 300 kilometers from the coast of affected administrations, it is not considered appropriate that the ITU should mandate coordination distances out to sea. There are various legal aspects regarding such action which might contravene other international treaties.

Proposal:

USA/ /1
MOD

5 925 – 6 700 MHz		
Allocation to services		
Region 1	**Region 2**	**Region 3**
5 925 – 6700	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.149 5.440 5.458 **ADD** 5.ESV	

Reasons: Footnote 5.ESV is added to provide guidance to administrations wishing to allow the use of earth stations on board vessels in the bands 5 925-6 425 MHz and 14-14.5 GHz and provide protection to existing users of the bands.

USA/ /2
MOD

14-14.5 GHz		
Allocation to services		
Region 1	**Region 2**	**Region 3**
14-14.25	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research 5.505 **ADD** 5.ESV	
14.25-14.3	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ~~**ADD**~~5.ESV RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research 5.505 5.508 5.509 **ADD** 5.ESV	
14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ~~**ADD** 5.ESV~~ MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite **ADD** 5.ESV	14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ~~**ADD** 5.ESV~~ Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite **ADD** 5.ESV	14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ~~**ADD** 5.ESV~~ MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite **ADD** 5.ESV

14.4-14.47	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ~~**ADD** 5.ESV~~ MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research (space-to-Earth) **ADD** 5.ESV
14.47-14.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ~~**ADD** 5.ESV~~ MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radio astronomy 5.149 **ADD** 5.ESV

Reasons: Footnote 5.ESV is added to provide guidance to administrations wishing to allow the use of earth stations on board vessels in the bands 5 925-6 425 MHz and 14-14.5 GHz and provide protection to existing users of the bands.

USA/ /3
ADD

5.ESV Administrations may operate earth-stations on board vessels in the bands 5 925-6 425 MHz and 14-14.5 GHz in accordance with the provisions of Resolution 82 (Rev. 2003). Such use shall not cause harmful interference to, claim protection from, or otherwise impose constraints on the operation or development of other radio services operating in the band 5 925-6 425 MHz.

Reasons: To provide guidance to administrations wishing to allow the use of earth stations on board vessels in the bands 5 925-6 425 MHz and 14-14.5 GHz and provide protection to existing users of the bands.

USA/ /4
MOD

RESOLUTION 82 (WRC-2003)

Provisions relating to earth stations located on board vessels which operate in fixed-satellite service networks in the bands 5 925-6 425 MHz and 14.0-14.5 GHz

The World Radiocommunication Conference (Caracas, 2003),

considering

a) that there is a demand for global wideband satellite communication services on vessels;

b) that ESVs are currently operating through fixed-satellite service networks in the bands 3 700-4 200 MHz, 5 925-6 425 MHz, 10.7-12.75 GHz, and 14.0-14.5 GHz;

c) that ESVs have the potential to cause unacceptable interference to other services in the 5 925-6 425 MHz and 14.0-14.5 GHz (Earth-to-space) bands;

d) that ESVs operating in these bands require considerably less than the full bandwidth in the FSS allocation and only a portion of the visible geostationary arc;

e) that the number of vessels equipped with ESVs may be such as to place a heavy coordination burden on some administrations, especially those in developing countries;

f) that in order to ensure the protection and future growth of other services, ESVs shall operate with requisite technical and operational constraints;

g) that~~, based on appropriate assumptions,~~ a minimum distance ~~can be calculated~~ has been determined beyond which an ESV will not have the potential to cause unacceptable interference to other services in the~~is~~ same band on the same frequency,

h.) that the band 14-14.5 GHz is allocated on a secondary basis to the mobile-satellite service (Earth-to-space).

noting

a) that ESVs may operate in fixed-satellite service networks in the bands 3 700-4 200 MHz, ~~and~~ 5 925-6 425 MHz, and 10.7-12.75 GHz, ~~and 14-14.5 GHz~~ under No. **4.4** of the Radio Regulations and shall not claim protection from, nor cause ~~unacceptable~~ harmful interference to, other services having allocations in these bands;

b) that there is no need for new regulatory procedures for ESVs operating at specified fixed points,

c) that ESVs may operate on a secondary basis in the mobile-satellite service in the band 14-14.5 GHz

recognizing

~~*a)*~~ that ~~progress has been made within ITU-R in determining~~ the ITU-R has determined the technical and operational provisions under which ESVs could operate;

~~*b)* that further studies are needed,~~

resolves

1 that any transmissions from ESVs within an agreed distance, as identified in *resolves* 2 of this resolution, ~~shall~~ should be based upon the prior agreement of the concerned administration;~~to invite ITU-R to continue to study, as a matter of urgency, the regulatory, technical and operational constraints to be applied to ESV operations, having regard to the provisional guidelines for ESV use in Annex 1 and the provisional technical guidelines given in Annex 2 and, in particular, to determine the appropriate value for the minimum distance from ESV stations beyond which these stations are assumed not to have the potential to cause unacceptable interference to stations of other services of any administration and beyond which no coordination would be required;~~

~~2 to invite ITU-R, as a matter of urgency:~~

~~– to develop Recommendations on methods for coordination between terrestrial services and ESVs;~~

~~– to study the feasibility of mitigation techniques, such as various frequency arrangements or dual-band systems, as a way to avoid the need for detailed coordination of ESVs without constraining existing services;~~

~~– to study, as a complement to the 3 700-4 200 MHz and 5 925-6 425 MHz bands, the use of other FSS allocations for ESVs transmitting in the 6 GHz and 14 GHz bands;~~

~~3 to invite WRC-03 to assess, in the light of these studies, the provisions under which ESVs could operate in FSS networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, without causing~~

~~unacceptable interference to radiocommunication services operating in accordance with the Radio Regulations;~~

~~4 that, until a decision is adopted for ESVs by WRC-03, agreement between the administrations licensing ESVs and affected administrations should be reached on a bilateral or multilateral basis, in accordance with the guidelines in Annexes 1 and 2;~~

~~5 that, until a decision is adopted for ESVs by WRC-03, administrations licensing ESVs that enter into bilateral or multilateral agreements under *resolves* 4 above should ensure that, as part of the licensing process, ESVs operate in compliance with such agreements, taking into consideration the interests of concerned neighbouring countries,~~

2 that the minimum distances from ESV stations beyond which these stations are assumed not to have the potential to cause unacceptable interference to stations of other services of any administration and beyond, which no agreement is necessary are 300 km for the 5925-6425 MHz band and 125 km for the 14.0-14.5 GHz band;

3 that ESVs ~~shall~~should follow the operational procedures in Annex 1 and the technical constraints in Annex 2.

encourages concerned administrations

to cooperate with administrations ~~which~~that license ESVs ~~while~~and seek~~ing~~ agreement under ~~*resolves* 4~~ the provisions of Annex 1,

encourages ESV licensing administrations

to consider registering their ESV frequency assignments in the Master International Frequency Register, for information purposes only,

instructs the Secretary-General

to bring this resolution to the attention of the Secretary-General of the International Maritime Organization. ~~and to invite IMO to participate in the work on this issue.~~

Reasons: The use of ESVs on maritime mobile platforms (MMSS) is not an allocated service, therefore the language of Resolution 82 should be permissive in nature as opposed to mandatory.

USA/ /5
MOD

ANNEX 1 TO RESOLUTION 82 (WRC-200~~3~~0)

~~Provisional~~ Gguidelines for ESV use

~~1 The administration that issues the licence for the use of ESVs in these bands (licensing administration) shall ensure that such stations do not cause unacceptable interference to the services of other concerned administrations.~~

~~2 Operators of ESVs shall comply with the technical guidelines listed in Annex 2 and/or those agreed by the licensing and concerned administrations.~~

~~3 ESVs shall not claim protection from transmissions of other services operating in accordance with the Radio Regulations.~~

~~4 Any transmissions from ESVs within an agreed distance, as identified in *resolves* 1 of this resolution, shall be based upon the prior agreement of the concerned administration.~~

~~5 Administrations which issue ESV licences shall ensure that ESV operators endeavour to provide the necessary assistance to the concerned administrations in order to facilitate the agreement.~~

~~6 Administrations, in determining the distance referred to in item 4 above, are encouraged to exclude those parts of their territory, such as remote small islands, where other services in the band 5 925-6 425 MHz are neither operating nor planned.~~

~~7 If an administration changes its actual or planned deployment of stations in other services, it may require revision of the agreement with the ESV licensing administration(s).~~

~~8 The ESV system should include means of identification and automatic mechanisms to terminate transmissions whenever the station operates outside its authorized geographic (see item 4 above) or operational limits.~~

~~9 ESVs should be equipped so as to enable the licensing administration under the provisions of Article **S18** to verify earth station performance and to terminate ESV transmissions immediately upon request by an administration whose services may be affected.~~

~~10 When ESVs operating beyond the territorial waters but within a specified distance (as referred to in item 4 above) fail to comply with the terms required by the concerned administration pursuant to items 2 and 4, then that administration may:~~

~~– request the ESV to comply with such terms or cease operation immediately; or~~

~~– request the licensing administration to require such compliance or immediate cessation of the operation.~~

~~11 Any licensing authority that licenses ESVs should maintain at all times a point of contact that may be contacted by a concerned administration.~~

A. Initiation of Contact

When ships equipped with ESVs intend to operate in the band 5 925-6 425 MHz within 300 kilometers and in the band 14-14.5 GHz within 125 km of the territory of other administrations having co-frequency terrestrial stations, authorities of the ESV licensing administration ~~will~~ should contact in advance of operating within those distances the responsible authorities of the concerned administration to obtain agreements that will establish the technical basis for avoiding unacceptable interference to the terrestrial facilities of the concerned administration or administrations.

B. Recommended Actions of Concerned Administrations

Each Administration having terrestrial stations in these bands should have a point of contact for authorities of the ESV licensing Administration to initiate discussions. Concerned Administrations that have terrestrial facilities that could be affected by ships operating earth stations on board ships should do the following when contacted by the ESV licensing Administration or the ESV station operator aboard such a ship.

1) Determine if it has terrestrial systems in the same frequency band as the ESV.

2) Request the ESV licensing Administration to identify the range of its frequency operation.

3) Identify frequencies for ESV use where no coordination would be required.

4) Request the ESV licensing Administration to enter a frequency use arrangement.

C. ESV Operating Agreements

The authorities of the concerned Administration are encouraged to enter into an agreement with the authorities of the ESV licensing Administration that describes the conditions for operation of the ESV when operating near the coast or in ports of the concerned Administration. These agreements should be concluded prior to the operation of the ESV stations near the coast or in the ports of the concerned Administration. The agreement should consider using the 4/6 GHz band outside certain limits and not using the 4/6 GHz band inside certain limits in countries that have fixed service stations in the 6 GHz band and should include the possibility of switching to 14 GHz. The operating agreement may be revised at any time at the discretion of the concerned Administration, particularly whenever new terrestrial facilities are authorized that could potentially receive unacceptable interference.

D. Frequency Use Arrangements

National practices, as well as recommendations and guidelines of the ITU-R (such as, ~~...~~ ITU-R. S. [ESV-A[, [ESV-B], ESV-C and [ESV-Characteristics]), may be used in reaching bilateral frequency usage arrangements. Typical characteristics for ESV operations are contained in Annex 2.

E. Protection From Transmissions of Other Services

ESVs are not protected ~~shall not claim protection~~ from the transmissions of other services operating in the 4 GHz and 11/12 GHz bands.

F. ESV Point of Contact

Each ESV operator ~~shall~~ should provide a point of contact to the Administration and frequency coordinator of the country with which agreements have been reached for the purpose of reporting unacceptable interference. In the case that such interference has been identified to the satisfaction of the concerned Administration, at the direction of the concerned Administration, ESV operators must have the ability to immediately terminate the transmission from the responsible ESV station.

G. Avoidance of Unacceptable Interference

The ESV licensing Administration shall ensure that such stations do not cause unacceptable interference to the services of other concerned Administrations. In the event that unacceptable interference does occur, the ESV operator must eliminate the source of any interference from its station immediately upon being advised of such interference. Additionally, the ESV operator must immediately terminate transmissions at the request of either the concerned Administration or the ESV licensing Administration if either Administration determines that the ESV is not being operated in compliance with the operating agreement.

Additionally, ESVs stations should have the following operational capabilities:

1. The ESV system should include a means of identification and location, and automatic mechanisms to terminate transmissions whenever the station operates outside its authorized geographic (see *resolves* 2 or operational limits.

2. The ESV system should be equipped so as to enable the ESV licensing Administration under the provisions of Article S.18 to verify earth station performance and to terminate ESV transmissions immediately upon request by a concerned Administration whose services may be affected.

Reasons: Provide protection to existing radio services, provide administrations operating systems in existing radio services with guidance on how to conduct bi-lateral coordination with operators of ESV systems and provide administrations with the means to operate ESVs in the bands identified without being required to effect international coordination, or being subject to, mandatory provisions in the

Radio Regulations. Further, it provides guidance on how far out to sea such coordination might be applied without mandating these distances, which may contravene other existing treaties.

USA/ /6
MOD

ANNEX 2 TO RESOLUTION 82 (WRC-2003~~0~~)

~~Provisional technical guidelines applicable to ESVs operating in the bands 3 700-4 200 MHz and 5 925-6 425 MHz~~

This Annex contains typical characteristics of ESV operations on board ships in both the 5 925-6 425 MHz and 14-14.5 GHz band.

5925-6425 MHz

Minimum diameter of ESV antenna:	2.4 m
Maximum half-power beamwidth of ESV antenna:	1.5º
Minimum elevation angle of ESV antenna:	10°
Maximum necessary bandwidth per vessel:	2.346 MHz
~~Maximum necessary bandwidth in a single operating area:~~	~~36 MHz (see Note)~~
Maximum ESV transmitter power spectral density at the input to the antenna:	13~~17~~dB(W/MHz)
Tracking accuracy of ESV antenna:	±0.2º peak

14-14.5 GHz

Minimum diameter of ESV antenna:	1.2 m
Maximum half-power beamwidth of ESV antenna:	1.2º
Minimum elevation angle of ESV antenna:	10°
Maximum necessary bandwidth per vessel:	2.346 MHz
Maximum ESV transmitter power spectral density at the input to the antenna:	8.5 dB(W/MHz)
Tracking accuracy of ESV antenna:	±0.2º peak

~~Note: The actual bandwidth required in an operating area will depend on the number of ESVs that would be present simultaneously in that area, and in many areas the required bandwidth will be less than 36 MHz. In addition, because ESVs are frequency agile, the necessary bandwidth per vessel (2.346 MHz) can be generally identified within the 4/6 GHz bands and does not have to be contiguous with bandwidth of other ESVs.~~

Reasons: [1]

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[1] NTIA has no objection to the modifications proposed to Annex 2 of Resolution 82. The FCC needs to draft "Reasons" text for the changes proposed to Annex 2 of Resolution 82.

United States of America

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.31: to consider the additional allocations to the mobile-satellite service in the 1-3 GHz band, in accordance with Resolutions 226 (WRC-2000) and 227 (WRC-2000);

Background Information: WRC-2000 considered proposals for worldwide allocation of the band 1 683-1 690 MHz to the mobile-satellite service (MSS) (Earth-to-space) in response to Resolution **213 (WRC-95)**. The frequency band 1 675-1 710 MHz is allocated to the MSS (Earth-to-space) in Region 2 on a co-primary basis. However, the 1 683-1 690 MHz portion is used mainly by the meteorological-satellite (MetSat) and meteorological aids (MetAids) services. While there are only a limited number of MetSat earth stations operating in this band in Region 1, there are a large number of MetSat earth stations operating in Regions 2 and 3, and the locations of many of these stations are not identified. Sharing between MetSat and MSS in the band 1 675-1 690 MHz is feasible only if appropriate separation distances are maintained.

Sharing between MetSat and MSS may not be feasible in those countries where a large number of MetSat stations are deployed. Recommendation ITU-R **SA.1158-2** indicates that additional studies are required in order to determine the criteria for coordination between MSS and the MetSat service for GVAR/S-VISSR stations operated in the band 1 683-1 690 MHz in Regions 2 and 3.

Other spectrum identified in Resolution **213** included 1 690-1 710 MHz. However, the ITU-R has concluded that co-channel sharing between MSS and MetAids is not feasible and that co-frequency sharing between MetAids and MetSat services is not feasible. Therefore, the World Meteorological Organization (WMO) has identified future spectrum requirements for MetAids operations as limited to the 1 675-1 683 MHz portion of the 1 675-1 700 MHz band, but some administrations will continue to require spectrum in the range 1 683-1 690 MHz for MetAids operations. Resolution 227 noted that, due to incompatibility between MSS and MetSats/MetAids, no further study is required on sharing in the 1 675-1 683 MHz and the 1 690-1 710 MHz bands.

The existing Region 2 allocation includes the provision that MSS operation should not constrain current and future development of the MetSat service, as specified in No. **5.377**. No MSS services have been implemented under the Region 2 allocation in this band.

Proposal:

USA/ /1
MOD

1 675-1 710 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
1 675-1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	**1 675-1 690** METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile<br~~MOBILE-SATELLITE (Earth-to-space)~~ 5.341 ~~5.377~~	**1 675-1 690** METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341
1 690-1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	**1 690-1 700** METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) ~~MOBILE-SATELLITE (Earth-to-space)~~ 5.289 5.341 ~~5.377~~ 5.381	**1 690-1 700** METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 5.289 5.341 5.381
1 700-1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	**1 700-1 710** FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile ~~MOBILE-SATELLITE (Earth-to-space)~~ 5.289 5.341 ~~5.377~~	**1 700-1 710** FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341 5.384

Reasons: There are no MSS systems operating in this band, and none are currently planned, due to the incompatibility of MSS and the Metaids and MetSat services.

USA/ /2
SUP

5.377

Reasons: Consequential to the deletion of the allocation for MSS.